

1 What is claimed is:

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3 1. A method for creating recordable regions and non-recordable regions in a  
4 recording layer, the method comprising the steps of:

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6 placing a mask over the recording layer, wherein the mask includes a  
7 pattern that defines the recordable regions and the non-recordable regions to be  
8 created in the recording layer;

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10 changing the magnetic properties of portions of the recording layer in  
11 order to create recordable regions or non-recordable regions in the recording  
12 layer; and

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14 removing the mask.

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17 2. The method of claim 1, wherein the recording layer is comprised of a single,  
18 dual, or multi-layer recording layer.

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21 3. The method of claim 2, wherein the step of placing a mask over the recording  
22 layer comprises the sub-steps of:

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24 forming a mask over the recording layer; and

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26 defining a pattern in the mask, wherein the pattern defines the recordable  
27 regions and the non-recordable regions to be created in at least one layer in the  
28 recording layer.

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31 4. The method of claim 3, wherein the step of defining a pattern in the mask  
32 comprises the step of defining a pattern in the mask using photolithography.

1 5. The method of claim 4, wherein the step of defining a pattern in the mask  
2 using photolithography exposes portions of the recording layer.

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5 6. The method of claim 5, wherein the step of changing the magnetic properties  
6 of portions of the recording layer comprises the step of exposing the mask and  
7 the exposed portions of the recording layer to a plasma, wherein the magnetic  
8 properties of at least one layer in the exposed portions of the recording layer are  
9 changed.

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12 7. The method of claim 5, further comprising the step of etching away a portion  
13 of the recording layer in the exposed portions of the recording layer, wherein  
14 grooves are formed in at least one layer within the exposed portions of the  
15 recording layer.

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18 8. The method of claim 7, wherein the step of changing the magnetic properties  
19 of portions of the recording layer comprises the step of exposing the mask and  
20 the exposed portions of the recording layer to a plasma, wherein the magnetic  
21 properties of at least one layer in the exposed portions of the recording layer are  
22 changed.

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25 9. The method of claim 3, wherein the step of defining a pattern in the mask  
26 comprises the step of defining a pattern in the mask using imprint lithography.

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29 10. The method of claim 9, further comprising the step of removing at least a  
30 portion of the mask after performing imprint lithography, wherein portions of  
31 the recording layer are exposed.  
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1 11. The method of claim 10, wherein the step of changing the magnetic  
2 properties of portions of the recording layer comprises the step of exposing the  
3 mask and the exposed portions of the recording layer to a plasma, wherein the  
4 magnetic properties of at least one layer in the exposed portions of the recording  
5 layer are changed.

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8 12. The method of claim 10, further comprising the step of etching away a  
9 portion of the recording layer in the exposed portions of the recording layer,  
10 wherein grooves are formed in at least one layer within the exposed portions of  
11 the recording layer.

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14 13. The method of claim 12, wherein the step of changing the magnetic  
15 properties of portions of the recording layer comprises the step of exposing the  
16 mask and the exposed portions of the recording layer to a plasma, wherein the  
17 magnetic properties of at least one layer in the exposed portions of the recording  
18 layer are changed.

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21 14. A system for creating recordable regions and non-recordable regions in a  
22 recording layer, the system comprising:

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24 means for placing a mask over the recording layer, wherein the mask  
25 includes a pattern that defines the recordable regions and the non-recordable  
26 regions to be created in the recording layer;

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28 means for changing the magnetic properties of portions of the recording  
29 layer in order to create recordable regions or non-recordable regions in the  
30 recording layer; and

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32 means for removing the mask.  
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1 15. The system of claim 14, wherein the recording layer is comprised of a single,  
2 dual, or multi-layer recording layer.

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5 16. The system of claim 15, wherein the means for placing a mask over the  
6 recording layer comprises:

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8 means for forming a mask over the recording layer; and

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10 means for defining a pattern in the mask, wherein the pattern defines the  
11 recordable regions and the non-recordable regions to be created in at least one  
12 layer in the recording layer.

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15 17. The system of claim 16, wherein the means for defining a pattern in the mask  
16 exposes portions of the recording layer.

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19 18. The system of claim 17, wherein the means for changing the magnetic  
20 properties of portions of the recording layer comprises means for exposing the  
21 mask and the exposed portions of the recording layer to a plasma, wherein the  
22 magnetic properties of at least one layer in the exposed portions of the recording  
23 layer are changed.

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26 19. The system of claim 17, further comprising means for etching away a portion  
27 of the recording layer in the exposed portions of the recording layer to form  
28 grooves in at least one layer within the exposed portions of the recording layer.

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31 20. The system of claim 19, wherein the means for changing the magnetic  
32 properties of portions of the recording layer comprises means for exposing the  
33 mask and the exposed portions of the recording layer to a plasma, wherein the



1 non-recrdable regions in the magnetic recording media; and

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3 recordable regions in the magnetic recording media, wherein the  
4 coercivity of the non-recordable regions differ from the coercivity of the  
5 recordable regions.

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8 27. A storage system, comprising:

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10 a storage disk having recordable and non-recordable regions, wherein the  
11 recordable and non-recordable regions are defined by different magnetic  
12 properties in a recording layer on the storage disk; and

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14 means for reading from, and writing to, the recordable regions on the  
15 storage disk.

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